IN THE CLAIMS

Please amend the following claims:

1-15. (cancelled)

16. (currently amended) An optical catheter connector, comprising:

a flexible hollow catheter ferrule;

a rigid retainer housed inside the catheter ferrule, wherein the retainer has at least two cutouts;

a fiber connector housed inside the retainer;

an optical fiber positioned along a rotational axis of the fiber connector; and

a connector bushing housed inside the retainer, wherein the connector bushing is attached to the fiber connector and the connector bushing has ribs on its outer surface positioned at, and configured to engage, the cutouts of the retainer for providing proper engagement with a motor unit.

17. (currently amended) The catheter connector of claim 34 ~~16~~, wherein the cutouts ~~openings~~ in the retainer are elliptical.

18. (original) The catheter connector of claim 16, wherein the catheter ferrule is made of a flexible polymer.

19. (original) The catheter connector of claim 16, wherein the retainer is made of polycarbonate.

20. (original) The catheter connector of claim 16, wherein the retainer is made of plastic.

21. (currently amended) The catheter connector of claim 16, further comprising a shield disposed around an outer periphery ~~surrounding the other surface~~ of the catheter ferrule.

22-33. (cancelled)

IN THE DETAILED DESCRIPTION

Please amend the Detailed Description of the Preferred Embodiments as follows:

[0037] (currently amended) A flexible drive shaft 58 is provided for rotating the catheter fiber 60 inside a human body. The drive shaft 58 encloses the catheter fiber along the length of the catheter outside of the fiber connector. The drive shaft 58, preferably, possesses both a high torsional stiffness and a low bending stiffness. This allows the drive shaft 58 to rotationally drive the catheter fiber 60 while allowing the drive shaft 58 to bend along the path of a body lumen. The drive shaft 58 may, for example, be made of two counterwound layers of multifilar coils, which are commonly used in Intravascular Ultrasound (IVUS) catheters. The proximal end of the driveshaft 58 is sealed onto the catheter connector 32, e.g., with epoxy 48, to create a liquid tight seal to prevent fluid from contaminating the catheter fiber connector 32. A conical strain relief 54 is provided at the tip of the OCT catheter connector 1 to prevent damage to the catheter fiber 60 or the drive shaft 58 by evenly distributing bending forces as the catheter is pulled to the side. The OCT connector further includes a catheter shaft 56 running though the axis of the 'O' ring housing 50 and the conical strain relief 54. The catheter shaft 56 is attached to the 'O'-ring housing, e.g., with epoxy. Of course, any structures in any embodiment which are attached by epoxy or adhesive can instead be attached by any other means. The drive shaft 58 runs through the catheter shaft 56 and rotates inside the catheter shaft 56.

[0039] (currently amended) Figure 6 shows a radial cross-sectional view of the OCT connector 1 taken through the grippers 34 and looking distally. The catheter ferrule wall 74 has two slots 72 through which the grippers 34 contact the adapter 30 to push the catheter fiber connector ~~fiber~~ 32 into proper engagement with the fiber-to-fiber adapter 10.